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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/042,070	10/19/2001	Naimish Patel	SYCS-043/P95	3895
959	7590	11/04/2004	EXAMINER	
LAHIVE & COCKFIELD, LLP. 28 STATE STREET BOSTON, MA 02109			TRAN, DZUNG D	
			ART UNIT	PAPER NUMBER
			2633	

DATE MAILED: 11/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/042,070

Applicant(s)

PATEL ET AL.

Examiner

Dzung D Tran

Art Unit

2633

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 October 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-46 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-46 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION***Drawings***

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "a first module for receiving, extracting and processing said plurality of wavelengths, a second module with a plurality of input ports and a plurality of output ports for extracting each of said plurality of signal components from said plurality of wavelengths processed by said first module and a third module for routing said plurality of signal components from said input ports to said plurality of output ports in said second module, a circuit adaptation, one or more circuit layer, a wavelength power balancing, a wavelength dispersion compensation, a wavelength protection, one or more circuit layer comprises a signal regeneration, the one or more circuit layer comprises per circuit performance monitoring and one or more circuit layer comprises a wavelength protection, an electrical add and an electrical drop function" in claims 1-44 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the

Art Unit: 2633

remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-44 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claims 1-44 require "a first module for receiving, extracting and processing said plurality of wavelengths, a second module with a plurality of input ports and a plurality of output ports for extracting each of said plurality of signal components from said plurality of wavelengths processed by said first module and a third module for routing said plurality of signal components from said input

Art Unit: 2633

ports to said plurality of output ports in said second module, a circuit adaptation function, one or more circuit layer function, a wavelength power balancing function, a wavelength dispersion compensation function, a wavelength protection function, one or more circuit layer functions comprises a signal regeneration function, the one or more circuit layer functions comprises per circuit performance monitoring function and one or more circuit layer functions comprises a wavelength protection function, an electrical add and an electrical drop function ". However, the specification and drawing do not provide any specific detail to teach the limitations above and how they relate to the invention. Without such detail description, the disclosure does not enable a person of ordinary to made and use the claimed invention.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Art Unit: 2633

5. Claims 1, 2, 4-6, 15, 20, 22, 23, 30, 35, 45 and 46 are rejected under 35 U.S.C. 102(e) as being anticipated by Lauder et al. US publication no. 2002/0135835.

Regarding claim 1, as far as examiner understood, Lauder discloses an optical node for processing an incoming optical signal with a plurality of wavelengths with each of said plurality of wavelengths having a plurality of signal components in a wavelength division multiplexing (WDM) optical network (figure 1), comprising:

- a first module (e.g. DWDM interface, page 3, paragraph 0039, lines 3-5) for receiving, extracting and processing said plurality of wavelengths;

- a second module (e.g. TIC 102, 140, 120 page 2, paragraph 0028, line 2) with a plurality of input ports (e.g. the input ports that receive the signals from DWDM interface) and a plurality of output ports (e.g. the output ports to the switch 108) for extracting each of said plurality of signal components from said plurality of wavelengths processed by said first module; and

- a third module (e.g. switch 108, page 2, paragraph 0028, line 25) for routing said plurality of signal components from said input ports to said plurality of output ports in said second module (e.g. TIC 102, 140, 120 page 2, paragraph 0028, line 2).

Regarding claim 20 and 35, as far as examiner understood, Lauder discloses an optical node for processing an incoming optical signal with a plurality of wavelengths with each of said plurality of wavelengths having a plurality of signal components in a wavelength division multiplexing (WDM) optical network (figure 1), comprising:

Art Unit: 2633

of signal components in a wavelength division multiplexing (WDM) optical network (figure 1), comprising:

a first module (e.g. DWDM interface, page 3, paragraph 0039, lines 3-5) for receiving, extracting and processing said plurality of wavelengths;

a second module (e.g. TIC 102, 140, 120 page 2, paragraph 0028, line 2) for extracting each of said plurality of signal components from said plurality of wavelengths processed by said first module (e.g. DWDM interface, page 3, paragraph 0039, lines 3-5) ; and

a third module (e.g. switch 108, page 2, paragraph 0028, line 25) for routing said plurality of signal components from said input ports to said plurality of output ports in said second module.

Regarding claim 2, in figure 2 Lauder discloses the wavelength transceiver 204, page 2, paragraph 0029, line 4) imposed between a second module (e.g. TIC 102, 140, 120 page 2, paragraph 0028, line 2) and a third module (e.g. switch 108, page 2, paragraph 0028, line 25).

Regarding claims 4, 21 in figure 1 Lauder discloses optical input line 106 coupled to a first module (DWDM interface) and optical signal having different wavelengths (e.g. DWDM wavelengths).

Regarding claims 5, 6, 15, 22, 23 and 30, Lauder further discloses the transceiver 204 and regenerator 208 for extracting and processing the optical signal.

Regarding claim 45, Lauder discloses an optical switch node (figure 1, element 100), comprising: a plurality of port interface circuit card (e.g. TIC 102,

Art Unit: 2633

140, 120 page 2, paragraph 0028, line 2) assemblies having mounted thereto, a plurality of DWDM lasers (from transceiver 204, page 2, paragraph 0028, line 25) having a plurality of wavelengths for interconnecting said plurality of port interface circuit card (e.g. TIC 102, 140, 120, page 2, paragraph 0028, line 2) assemblies with a switch chassis (e.g. switch 108, page 2, paragraph 0028, line 25) and a plurality of optical transceivers (transceiver 204, page 2, paragraph 0028, line 21) to interconnect said plurality of port interface circuit card (e.g. TIC 102, 140, 120 page 2, paragraph 0028, line 2) assemblies with said switch chassis (e.g. switch 108, page 2, paragraph 0028, line 25).

Regarding claim 46, Lauder discloses the plurality of port interface circuit card assemblies (e.g. TIC 102, 140, 120 page 2, paragraph 0028, line 2) further comprises a dense wavelength division multiplexing (DWDM) receiver (from transceiver 204, page 2, paragraph 0028, lines 22-23) for receiving and processing a plurality of optical channel signals.

6. Claims 1- 7, 20-23, 30 and 35 are rejected under 35 U.S.C. 102(b) as being anticipated by Bottle et al. US patent no. 5,303,077.

Regarding claim 1, as far as examiner understood, Bottle discloses an optical node for processing an incoming optical signal with a plurality wavelengths with each of said plurality of wavelengths having a plurality of signal components in a wavelength division multiplexing (WDM) optical network (figure 1), comprising:

Art Unit: 2633

a first module (e.g. input circuit 111) for receiving, extracting and processing said plurality of wavelengths (col. 2, lines 64-68);

a second module 17 of figure 1 with a plurality of input ports (e.g. the input ports that receive signals from input circuit 111 to 11n) and a plurality of output ports (e.g. the output ports of space switch 13) having (TSI) for extracting each of said plurality of signal components from said plurality of wavelengths processed by said first module; and

a third module (e.g. space switch section 13) for routing said plurality of signal components from said input ports to said plurality of output ports in said second module 17.

Regarding claim 20 and 35, as far as examiner understood, Bottle discloses an optical node for processing an incoming optical signal with a plurality wavelengths with each of said plurality of wavelengths having a plurality of signal components in a wavelength division multiplexing (WDM) optical network (figure 1), comprising:

a first module (e.g. input circuit 111) for receiving, extracting and processing said plurality of wavelengths (col. 2, lines 64-68);

a second module 17 of figure 1 having (TSI) for extracting each of said plurality of signal components from said plurality of wavelengths processed by said first module; and

a third module (e.g. space switch section 13) for routing said plurality of signal components from said input ports to said plurality of output ports in said second module 17.

Art Unit: 2633

Regarding claim 2, in figure 1B Bottle discloses the wavelength converter 14 having transmitter and receiver (same as claimed transceiver, col. 4, lines 7-8) imposed between a second module 18 and a third module (e.g. space switch section 13).

Regarding claim 3, in figure 1B Bottle further discloses the wavelength converter 14 (same as claimed transponder) imposed between a first module (e.g. input circuit 111) and a second module 17.

Regarding claims 4, 21 in figure 1 Bottle discloses optical input line (col. 2, line 64) coupled to a first module (e.g. input circuit 111) and optical signal having different wavelengths (col. 3, line 1).

Regarding claims 5, 6, 15, 22, 23 and 30, Bottle further discloses the wavelength converter 14 (same as claimed transponder) for extracting.

Regarding claim 7, Bottle discloses a third module is space switch 13.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 13, 28, 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lauder et al. US publication no. 2002/0135835 in view of Graves et al. US publication no. 2001/0050790.

Art Unit: 2633

Regarding claims 13, 28, 36, as it is understood in view of the above 112 problems, as per claims above, Lauder discloses all the limitations except that the first module comprising wavelength amplification function (claims 13, 28, 36). Graves, from the same field of endeavor, discloses wavelength amplification function 104 (page 3, paragraph 0035, line 2). Since optical amplifier is well known for amplifying an optical signal and since it is also well recognized that signal degrades as it travel down through the transmission path, at the time of the invention was made, it would have been obvious to a person of ordinary skill in the art to incorporated the wavelength amplification function of Graves in the system of Lauder in order to restore the signal strength to a desirable level to obtain good quality

9. Claims 9-19, 24-29, 31-34 and 36-44, are rejected under 35 U.S.C. 103(a) as being unpatentable over Bottle et al. US patent no. 5,303,077 in view of Graves et al. US publication no. 2001/0050790.

Regarding claims 13, 28, 36, as per claims above, as it is understood in view of the above 112 problems, Bottle discloses all the limitations except that the first module comprising wavelength amplification function (claims 13, 28, 36). Graves, from the same field of endeavor, discloses wavelength amplification function 104 (page 3, paragraph 0035, line 2). Since optical amplifier is well known for amplifying an optical signal and since it is also well recognized that signal degrades as it travel down through the transmission path, at the time of the invention was made, it would have been obvious to a person of ordinary skill

Art Unit: 2633

in the art to incorporated the wavelength amplification function of Graves in the system of Bottle in order to restore the signal strength to a desirable level to obtain good quality

10. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bottle et al. US patent no. 5,303,077 or Lauder et al. US publication no. 2002/0135835 in view of Kajita US patent no. 6,687,280.

Regarding claim 8, as it is understood in view of the above 112 problems, as per claims above, Bottle or Lauder discloses all the limitations except for the transceiver comprise a vertical cavity surface emitting laser diode (VCSEL). Kajita discloses a vertical cavity surface emitting laser diode (VCSEL) (see abstract). At the time of the invention was made, it would have been obvious to a person of ordinary skill in the art to incorporated a VCSE laser in the transceiver 204 of Kajita in the system of Lauder. One of ordinary skill in the art would have been motivated to do this in order to take the advantage of the VCSEL that is an extremely small, monolithically integrated lasers may be constructed, with a self-aligned external cavity. Tuning speeds and stability are therefore likely to be high, and the cavity is automatically set for lasing.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Art Unit: 2633

- a. Lewin et al. U.S. patent no. 6,587,476. Ethernet frame encapsulation over VDSL using HDLC
- b. Bischoff U.S. patent no. 6,215,568. WDM switching network
- c. Nishi et al. US publication no. 2002/0063926. Optical cross-connect device and system having the device

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dzung D Tran whose telephone number is (571) 272-3025. The examiner can normally be reached on 9:00 AM - 7:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Art Unit: 2633

DT

10/19/2004

M. R. Sedighian

**M. R. SEDIGHIAN
PRIMARY EXAMINER**